

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-20 (Canceled).

21. (New) Cooling equipment for cooling a cooled material, said cooling equipment comprising:

a cooling space for receiving the cooled material;

an inner wall limiting the cooling space;

an outer wall;

an intermediate space between the outer wall and the inner wall; and

a cooling agent supply line for introducing a cooling agent,

wherein the cooling agent supply line empties into the intermediate space between the inner wall and the outer wall and introduces the cooling agent into the intermediate space, the inner wall being permeable for the cooling agent.

22. (New) The cooling equipment according to Claim 21, wherein a buffer material is arranged in the intermediate space, said buffer material temporarily receiving the cooling agent introduced into the intermediate space, and continuously transferring said buffer material through the inner wall into the cooling space.

23. (New) The cooling equipment according to Claim 22, wherein the buffer material is porous.

24. (New) The cooling equipment according to Claim 21, wherein the inner wall is substantially grid-shaped.

25. (New) The cooling equipment according to Claim 21, wherein the inner wall comprises a thermally conductive material.

26. (New) The cooling equipment according to Claim 25, wherein the inner wall consists essentially of metal.

27. (New) The cooling equipment according to Claim 21, wherein the cooling space is vat-shaped and an upper side of the cooling space has a circumferential edge.

28. (New) The cooling equipment according to Claim 27, wherein the cooling agent supply line has a cooling agent distributor extending along the circumferential edge of the cooling space and the cooling agent distributor introduces into the intermediate space the cooling agent in a distributed manner over a length of the cooling agent distributor.

29. (New) The cooling equipment according to Claim 21, wherein a heating element is arranged in the cooling space.

30. (New) The cooling equipment according to Claim 29, wherein the heating element is arranged under a heating plate, the heating plate having several perforations that make a circulation of gas possible.

31. (New) The cooling equipment according to Claim 21, wherein a removable protective bell is placed on the cooling space.

32. (New) The cooling equipment according to Claim 31, wherein the protective bell is at least partially transparent.

33. (New) The cooling equipment according to Claim 31, wherein the protective bell has a sample lock.

34. (New) The cooling equipment according to Claim 31, wherein a cold gas outlet via which cooling agent and cold gas can escape from the cooling space is arranged on a lower side of the protective bell.

35. (New) The cooling equipment according to Claim 21, wherein a cold gas outlet via which cooling agent and cold gas can escape from the cooling space is arranged on an upper side of the cooling space.

36. (New) The cooling equipment according to Claim 21, further comprising:
a temperature sensor arranged in the cooling space for measuring a temperature in the cooling space;

a controllable cooling agent valve for adjusting an amount of cooling agent supplied; and
a temperature control device for regulating the temperature in the cooling space, the

temperature control device being connected on an input side to the temperature sensor and on an output side to the cooling agent valve.

37. (New) The cooling equipment according to Claim 36, wherein the temperature control device is connected via a pulse generator to the cooling agent valve, the pulse generator alternately opening and closing the cooling agent valve.

38. (New) The cooling equipment according to Claim 36, wherein the temperature sensor is arranged at a processing position in the cooling space.

39. (New) The cooling equipment according to Claim 36, wherein the temperature control adjusts a supply of the cooling agent in such a manner that no cooling agent lake forms on a bottom of the cooling space.

40. (New) The cooling equipment according to Claim 21, wherein the cooling agent is liquid nitrogen.

41. (New) A method of using the cooling equipment according to Claim 21 to investigate, process or manipulate a cryosample.